

On a new Species of Symphyla from the Himalayas. By A. D. IMMS, B.A.,
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(Communicated by A. E. SHIPLEY, M.A., F.R.S., F.L.S.)

(PLATE 31.)

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DURING a brief visit in October, 1907, to the native state of Tehri Garhwal, the present writer came across several examples of a new species of Symphyla. On account of the phylogenetic importance connected with this order of Myriapoda, the occurrence is perhaps of more than the average interest attached to the discovery of an isolated new species of the latter class. The state of Tehri Garhwal extends over the south-western declivity of the Himalayas, is to a large extent covered with forests, and has been but little explored biologically. The specimens in question were found beneath moist stones bordering on a mountain stream, near the village of Dhanaulti, at an altitude of approximately 9000 feet. They were met with in company with a species of "earwig," one of Collembola, and also a species of Thysanura. Very possibly the species frequents other situations also, but, owing to an unusually severe drought that prevailed at the time, there were no other moist localities in the neighbourhood, and it is well known that such delicate and fragile animals are unable to survive in very dry situations. Altogether seven individuals were met with, and their occurrence constitutes but the second record of the Symphyla from India. In 1876 Wood-Mason* mentioned the presence of a species of *Scolopendrella* in Bengal but gave no further details.

The specimens here described belong to the genus *Scutigerella* and on the whole are more closely allied to *S. unguiculata*, Hansen, from Venezuela than to any other form.

SCUTIGERELLA SUBUNGUICULATA, sp. nov.

Seven specimens measuring 3-5 mm. in length (excluding the antennæ).

Head.—Just about as broad as long when viewed from above. The posterior angles rounded; a well developed lateral angle at the point of articulation of the mandible. The surface of the head covered with numerous scattered setæ very evenly spaced apart. The longest seta in front of the lateral angle about, or very nearly, as broad as the basal antennal joint.

Antennæ (Pl. 31. figs. 3, 4, & 5).—The number of joints varies from 21 to 31, and does not appear altogether to be dependent upon the size

* Proc. Asiatic Soc. Bengal, 1876, p. 175.

of the individuals, as may be observed in the table given below. In one specimen, measuring 3.75 mm. long, the left antenna consists of 29 joints while the right antenna has but 27 joints.

The setæ placed on the inner side of the antennal joints are not longer than those disposed on the outer aspect. The first six joints have only three principal setæ visible from above, but on the 7th joint, or thereabouts, a secondary whorl of setæ commences. A whorl of two or three very short setæ takes its origin (on the dorsal side) from about the 8th joint, and is placed in front of the principal or central whorl. The terminal joint is provided with numerous long and prominent setæ and, arising from a median protuberance at its apex, is a large stalked (sense?) organ. Placed near the base of the latter is a smaller organ of similar type but with a shorter stalk. A rudimentary organ (*r.o.* in fig. 3) of very small size is present on

Specimen.	Length in mm.	No. of antennal joints.
1	3	21
2	3.25	28
3	3.75	{ 27 (right ant.) 29 (left ant.)
4	4	30
5	4.45	23
6	4.45	29
7	5	31

each joint, from the third joint onwards, and is placed to the outside of the median dorsal line but situated within the anterior whorl of very short setæ mentioned above.

Scuta (figs. 1 and 2).—The first scutum with the posterior margin more convex than that of the second and the succeeding scuta. The second scutum with its antero-lateral setæ very much longer than the lateral setæ but little more than the breadth of the proximal antennal joint. Two pairs of its lateral setæ but little more than half the length of the antero-lateral setæ, only slightly longer than the remaining setæ, and inclined outwards and backwards. The thirteenth (penultimate) scutum is prominently emarginate posteriorly and with lobes broadly rounded.

Legs (figs. 6, 7, 8, and 9).—The first pair of legs with an elongate, slender, and slightly curved anterior claw. The smaller claw somewhat more strongly curved and reaching to about half the length of the former. The

anterior (front) seta (*f.s.* in fig. 7) as long as, or a little longer than, the smaller claw, and very stout and spine-like. The last pair (twelfth) of legs with a slender elongate tarsus, five times longer than deep. The setæ along the anterior dorsal margin of the tibia, metatarsus and tarsus are moderately long and prominent; the tibia with four such setæ, the metatarsus with five and the tarsus with seven. The exopod (*ex.* in fig. 8) very nearly as long as the depth of the metatarsus at its widest part. The anterior claw is long and tolerably slender; the other claw is also slender, strongly curved, and measures $\frac{1}{6}$ of the length of the anterior one. The front seta is much less strongly developed than that on the first pair of legs.

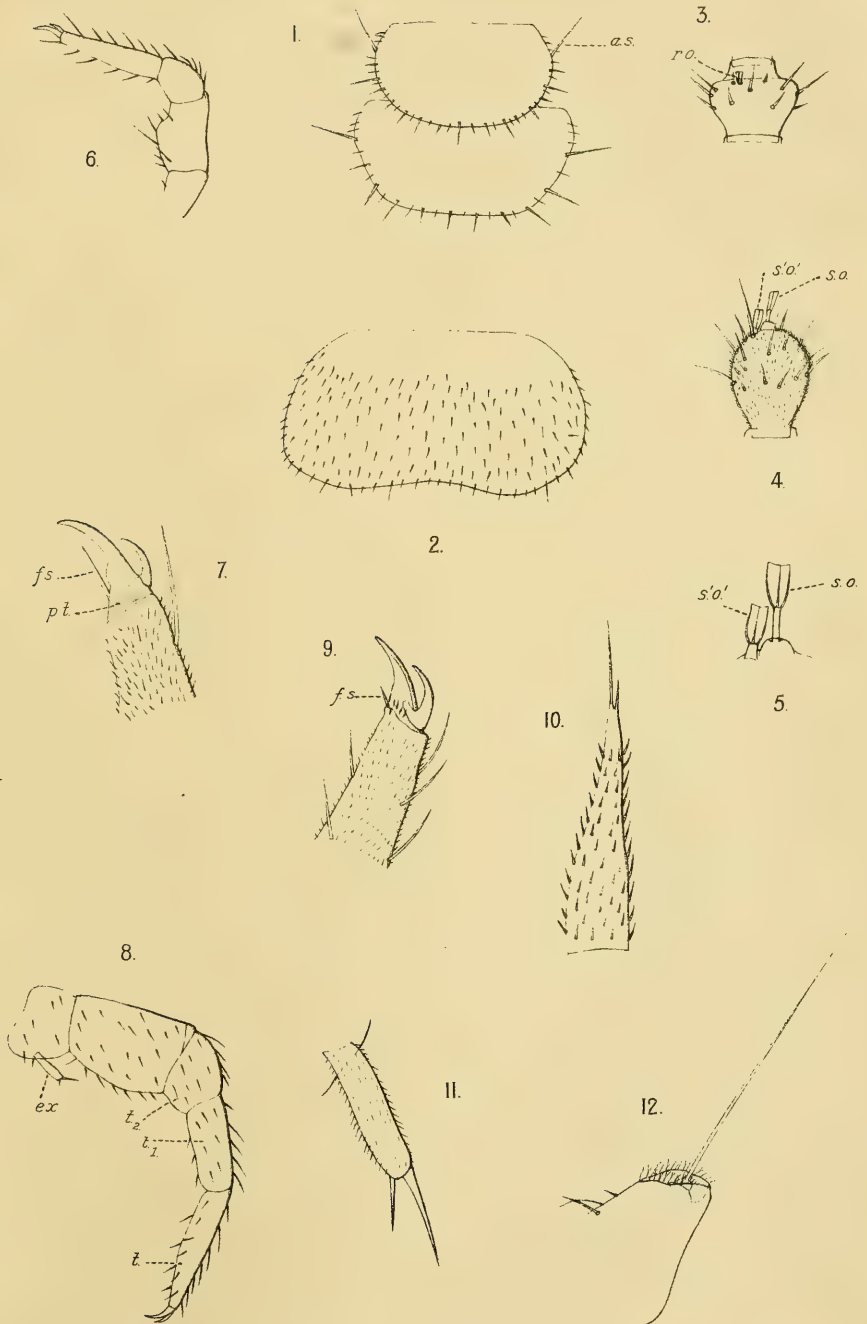
Cerci (fig. 10).—The length of the cercus is four times greater than the depth across the widest part. They are covered with short stout setæ, none of which is as long as half the depth of the cercus at the widest part. The largest of the two apical or terminal setæ longer by about one-sixth than the depth of the cercus.

Sensory Structures on the Last Segment (fig. 12).—These organs, which have been variously referred to as modified vestigial legs, caudal papillæ, &c., do not appear to afford much value as a specific character. In the present species each seta is very long and slender, being about three times as long as the sensory process itself; the calicles are of the form commonly found in *Scutigerella*.

Remarks on allied Species.—*S. subungiculata* is closely allied to *ungiculata* but differs from it in the following characters. Out of nearly fifty examples of the latter species examined by Hansen, the variation in length is only 3 to 3.6 mm. and the number of antennal joints varies only from thirty to thirty-four. The sinus on the posterior margin of the thirteenth (penultimate) scutum is not so strongly marked as in *S. unguiculata*. Furthermore, the anterior claw on the last pair of legs is not quite so long and slender as is the case in the latter species, and is intermediate in this respect between it and *S. caldaria*, Hansen. The species is easily distinguishable from *S. caldaria* from the fact that the setæ, in the central whorl on the joints of the antennæ, are long and stout and equal in size on both the upper and lower aspects. *S. orientalis*, Hansen, is closely allied to *S. subungiculata*, but is separable from it on account of possessing a shorter and stouter anterior claw to the last pair of legs, and a smaller exopodite to the legs.

Our knowledge of the Symphyla has been greatly extended and placed on a sound basis by Hansen's admirable memoir* on the order. In that work six species are described and recorded from Asia, but none of them have been found in India, and only one up to the present is known from the mainland, viz., *Scutigerella orientalis* from Bangkok. It is also known

* Quart. Journ. Mic. Sci., vol. xlii, 1904, pp. 1-101, pls. 1-7.



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SCUTIGEREUUA SUBUNGUICULATA, sp. nov.

from Koh Chang (an island in the Gulf of Siam), Sumatra, and Java. *S. plebeia* is described from Mauritius and *S. crassicornis* and *pauperata* from Koh Chang. Of the genus *Scolopendrella* two species, namely *S. simplex* and *S. brevipes*, are recorded from Asia and both from the island of Koh Chang. No additional species have been added up to the present.

EXPLANATION OF PLATE 31.

REFERENCE LETTERING.

<i>a.s.</i> Antero-lateral seta.	<i>s'.o'</i> Smaller sense-organ of antenna.
<i>ex.</i> Exopod.	<i>r.o.</i> Rudimentary sense-organ.
<i>f.s.</i> Front (or anterior) seta.	<i>t.</i> Tarsus.
<i>p.t.</i> Prætarus (Hansen).	<i>t₁</i> Metatarsus.
<i>s.o.</i> Principal sense-organ of antenna.	<i>t₂</i> Tibia.

- Fig. 1. *Scutigerebella subunguiculata*, first and second scuta showing marginal setæ, \times circa 60.
- Fig. 2. Thirteenth (penultimate) scutum from same specimen, \times circa 60.
- Fig. 3. Thirteenth joint of the antenna of a specimen with thirty-one joints and measuring 5 mm. long, viewed from above, \times 95.
- Fig. 4. Terminal antennal joint viewed from above, \times 95.
- Fig. 5. Sense-organs of the same terminal joint, \times 400.
- Fig. 6. First leg of right side, \times circa 90.
- Fig. 7. Claws of first leg of left side viewed from behind, \times 350.
- Fig. 8. Last (twelfth) leg of left side, \times circa 90.
- Fig. 9. Claws of last leg of left side, \times 350.
- Fig. 10. Right cercus seen from the inner aspect, \times circa 90.
- Fig. 11. Exopod of twelfth leg of the left side, \times 350.
- Fig. 12. Process with sensory calicle and seta seen from the outer side, \times 300.